

Amendments to the Specification:

Applicant presents replacement paragraphs below indicating the changes with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Please replace the paragraph beginning at page 9, line 9 which starts with "Data services are sometimes," with:

Data services are sometimes transmitted to the client system via a network 230, as illustrated in FIG. 2. This embodiment is similar to the embodiment in FIG. 1 in that broadcast television programming data 202 is up-linked to a satellite system 204 via transmitter 206 over a communication channel 208. The programming data is downlinked to the client system 200 via a communication channel 210 to antenna 212 and to receiver 212. However, in FIG. 2, IP content is transmitted to the client system 200 via the Wide Area Network (WAN) network 230 through network connections 216 and 218 from the Broadcast Server 214. The client system 200 also accesses the server 240 214 via network. The client system 200 also includes a digital video recorder 224, a television device 222 for displaying and an audio device 226.

Please replace the paragraph beginning at page 10, line 6 which starts with "For both satellite and digital cable," with:

For both the satellite and digital cable embodiments, data services in the form of enhanced IP content may be provided to the client systems in a dedicated data communication channel. In this embodiment, the Broadcast Server ~~144~~ 114, 214 or head-end pre-allocates the bandwidth to accommodate the data services in a channel or bundle of channels that are reserved for exclusive use of these services. However, data

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services may be transmitted in any manner. For example, such data services may be interleaved with the television programming. That is, for both the satellite and digital cable embodiments, data services may be inserted into the MPEG video stream in the form of a "trickle stream" of IP data. The use of a trickle stream avoids the allocation of additional communication channels.

Please replace the paragraph beginning at page 12, line 15 which starts with "For creating an enhanced user experience," with:

For creating an enhanced user experience, the IP data is augmented in some fashion before it is routed to the client system. For example, real-time event data relating to the active status of available television programming may be inserted in the IP stream and provided to the client system. Such data is used to create various real-time tunable alerts, triggers or filters and the like. The client system processes such data to create real-time visual indicators and cues and presents the visual indicators and cues together with IP data. Thus, for example, data corresponding to current status indicators of available sporting events and for invoking specific actions are provided to the client system. As explained below, the real-time data may be transmitted as event-based Extensible Markup Language (XML) representations. In one embodiment, such enhanced IP data is routed to the client systems through the transmission of IP encapsulated data from a server. The server is a dedicated server in one embodiment. Alternatively, the server may be located at the head-end of various cable operators, for example, the server ~~112~~ 114 illustrated in FIG. 1 or the server ~~212~~ 214 in FIG. 2. The XML event data is sometimes supplied to the client systems independent of the enhanced sports schedule data, but may be used in conjunction with such data in other embodiments.

Please replace the paragraph beginning at page 13, line 12 which starts with "The communication channel" with:

The communication channel ~~221~~ 218 shown in FIG. 2 may also be used as a back-channel to enable the initiation of requests for Internet services by the client system 200. In this way, additional data concerning the programming currently being broadcast may be retrieved from the Internet and provided to the viewer as well. For example, the data may permit the viewer to connect to a related web site to obtain relevant information concerning the broadcast.

Please replace the paragraph beginning at page 19, line 17 which starts with "FIG. 4 illustrates" with:

FIG. 4 illustrates additional content aggregators that optionally may be used in accordance with the invention to create Event Ids. As shown, a Movies Service Provider ~~404~~ 414(2), a Music Service Provider ~~406~~ 414(4) and a News Service Provider ~~408~~ 414(3) also provide normalized output data streams to the Broadcast Server 114. That is, for each television program, movie, or other piece of content, the appropriate service provider creates an Event Identifier for each program, event, or piece of content and associates that Identifier with content related to that program, event, or piece of content. For example, each movie in a movie database may receive an Event Id. Then, meta-data related to the movie is also assigned the same Event ID. Such data may include movie reviews, trailers, previews, interviews, etc. In News, events may be assigned Event Ids, such as an election scandal, an AIDS conference, a legislative debate, or the like. Then, meta-data associated with the event is also assigned the same Event ID, including web sites relating to the event, video clips, etc. For Music, a database of songs and artists each may receive an Event ID, and the meta-data relating to songs and artists receive the same Event ID. Other Service Providers ~~402~~ for different categories

can similarly create Event IDs that associate the programs, events, and contents related to their category with Event Identifiers.

Please replace the paragraph beginning at page 22, line 14 which starts with "The modular architecture" with:

The modular architecture employed in this embodiment permits the Broadcast Server 114 to route domain specific television schedule data received from the content aggregators 402, 404, 406, and 408 in the same fashion. Also, the Broadcast Server 114 may customize the schedule data to a specific viewing location. For example, the Broadcast Server is able to match the enhanced data to any changes in local channel lineups since the schedule information is updated daily. This provides advantages over known EPG delivery systems 451. Since they are updated less often, these systems often mismatch the EPG to local listings, particularly when occurrence of the sporting event is uncertain. The Broadcast Server 114 optionally performs additional localized functions with respect to the normalized data streams received from the Service Providers. However, modularization of these server components is optional.

Please replace the paragraph beginning at page 26, line 4 which starts with "When the digital signal" with:

When the digital signal includes multiple channels, the first digital tuner denoted by the block 524 512 tunes to a selected channel in the signal. If only one tuner is utilized, the selected channel includes a trickle stream of IP content to provide enhanced services to the viewer. Multiple digital tuners are preferably used to provide enhanced viewing features, such as picture-in-picture, recording one channel while viewing another, and recording a plurality of channels simultaneously. In the disclosed embodiment of the invention, at least one additional tuner 526 514 is adapted to

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receive the digital signal and tune to a second channel. This enables the IP content to be delivered over a separate channel where it is received by the tuner 526 514. However, even when the client includes multiple tuners, a trickle stream may be included in a selected channel along with television programming to avoid allocation of a tuner to receipt of IP content. This enables the viewer to utilize the additional tuner 526 514 for viewing and/or recording options, while at the same time receiving the services according to the invention.

Please replace the paragraph beginning at page 42, line 12 which starts with "In accordance with another aspect" with:

In accordance with another aspect of the invention, various data may be presented in conjunction with the enhanced sports schedule data presented in the navigation guide area. In particular, the screen display may also include a display area in which real-time event Alerts may be displayed to the viewer, such as in the Alert area 820 of FIG. 8. This provides up-to-date information as to an event or action that either recently occurred or is about to occur in one or more of the currently available programs that are not being displayed in the display area. Since the Alerts include associated Event Identification data, they enable the client system to automatically tune to the channel associated with the Alert upon selection by the user.

Please replace the paragraph beginning at page 47, line 3 which starts with "FIG. 13b illustrates" with:

The display screen 1300b of FIG. 13b illustrates another type of Alert that may be used in accordance with the invention. As with the embodiment of FIG. 13a, the display 1300b is segregated into a viewing area 1320b and a navigation guide area 1360b. In this instance, an Alert display area 1340b presents information concerning an

event that is about to occur in another broadcast program. As shown, a textual message is provided to the viewer to the effect that one team has just moved the football into the "Red Zone," namely within the opponent's 20-yard line, and is about to score a touchdown. The viewer may decide to view that program by simply selecting an appropriate button presented on the display, shown in FIG. 13b as a "Tune in now" button 1342b. In response to viewer selection, the system then automatically tunes to the program corresponding to the Alert display area 1340b. Numerous additional Alerts may be created in accordance with any number of defined game rules. These include the occurrence of a scoring play, such as a touchdown in football or a run in baseball. Also, Alert notifications concerning individual athletes may be created any time the athlete performs, or is about to perform, a task.

Please replace the paragraph beginning at page 48, line 8 which starts with "FIG. 14 illustrates" with:

FIG. 14 illustrates a display screen 1400 that uses IP content to provide DVR services to the viewer through a viewing window 1410. In this instance, the viewer has selected an "On Later" control in the coarse navigation bar 1418 on the display screen. This action causes the system to display sporting events that will be broadcast at some future time in the navigation guide area 1416. In addition, the display presents domain-specific enhanced content concerning the future event in an information display area 1422. As shown in FIG. 14, such information includes historical facts and other items of interest since in this example, the viewer has selected a "Notes" control in the navigation bar 1420. The display also presents "Remind" and "Record" buttons that permit user selection of these features. An advertisement may be shown in an advertisement window 1430.

Please replace the paragraph beginning at page 50, line 3 which starts with "Similarly, the invention" with:

Similarly, the invention also has applicability to television programming other than sports programming. For example, the invention may also be deployed in the context of music, movies and news selections. FIG. ~~17~~ 16 illustrates a user interface 1700 for navigating music entertainment programs according to another embodiment of the invention. This embodiment is particularly suited to output stereo sound to the audio system 126 shown in FIG. 5. In this embodiment, a navigation guide includes a program viewing window 1710, a navigation guide area 1716, and a coarse navigation area 1718 presenting a listing of types of music programs. While these programs in some instances are currently offered as television programs, they may also include digital radio programs. Thus, the navigation guide area presents currently available music television channels and provides in-progress information such as what video is currently playing, such as a "VH1: Music Videos - Santana" offering 1722. Optionally, the navigation guide area also presents currently available digital radio programs such as a "Classic Rock" offering 1724 and lists real-time information such as what song is currently being played on a specific channel. As with the above embodiments, the display may also be used to present tunable Alerts. Other Alerts are used to invoke particular actions by the client system.

Please replace the paragraph beginning at page 51, line 1 which starts with "The music navigation guide" with:

The music navigation guide 1700 also includes various buttons such as, for example, "MORE INFO" and "BUY" buttons as shown in FIG. ~~17~~ 16. When selected, information corresponding to these controls may be displayed in an information display area 1720.